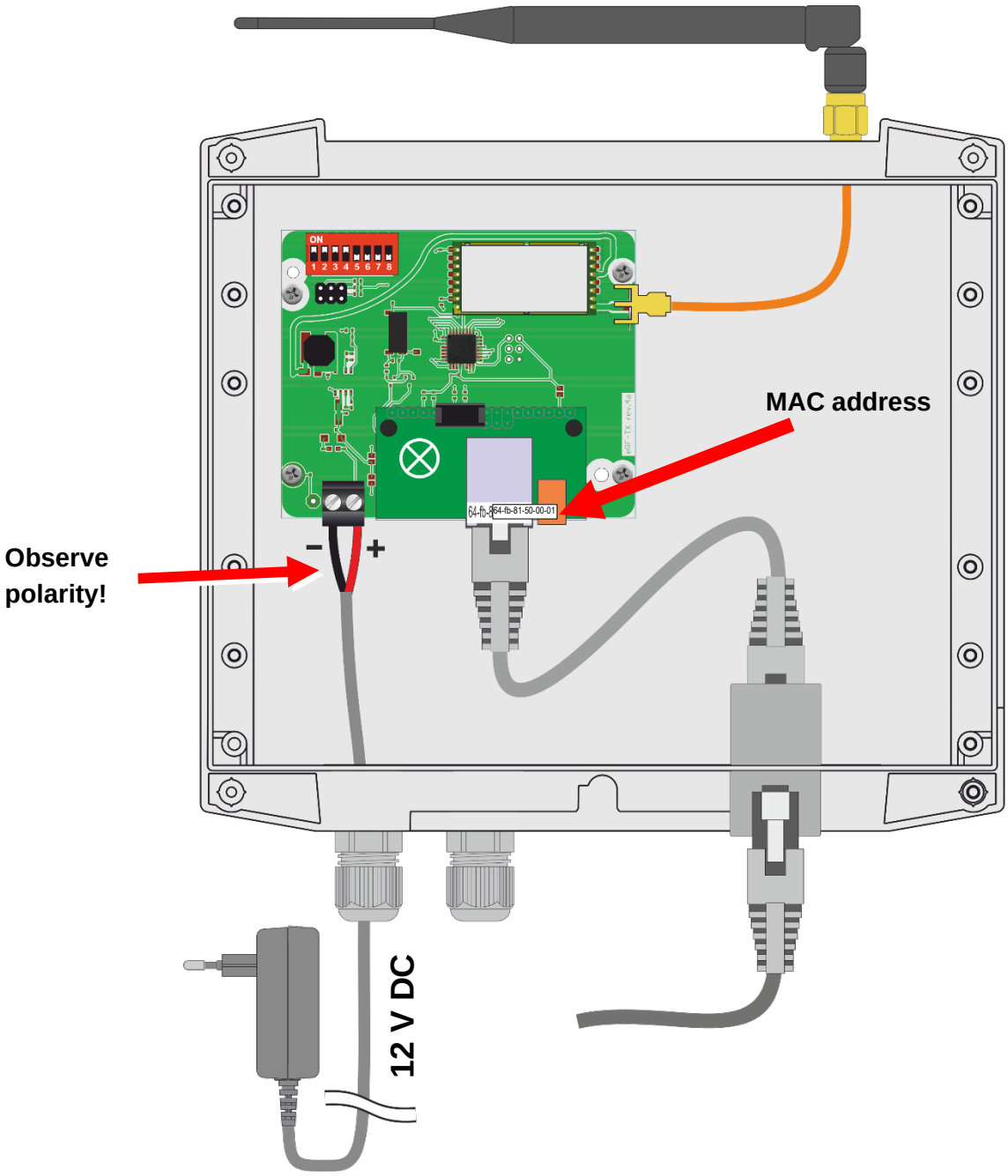
MOUNTING AND INSTRUCTION MANUAL

AirPort24 *transmitter*
with NTP synchronization

Art. no. 138333

Connection diagram



Introduction

The *AirPort24* transmitter receives the current time (UTC) from an NTP server via LAN, converts it into the local time (e.g. CET/CEST) and distributes the time information contained therein every second on the transmission frequency 869.525 MHz. Any number of *AirPort24 clocks* receive this time and synchronize with it.

Assembly / commissioning

1. Open the housing of the *AirPort24* transmitter.
   The housing cover is connected to the lower part by a cable.
   You can disconnect the plug connection on the circuit board for installation.

2. Screw the rear part of the housing to the wall.

3. Set the transmission power, see page 4.

4. Set the address, see page 4.

5. The 12 V power cable from the power supply unit is already connected into the left terminal of the *AirPort24* transmitter, see illustration on page 2.
   If it has been disconnected, reconnect it to the left terminal now.
   Note the polarity: left black (−), right red (+).

6. Close the housing using the 4 screws.

7. Plug the power supply into a 100-240 VAC/50-60 Hz power socket.

8. The green "power" LED on the front of the *AirPort24* transmitter lights up.

9. Configure the network settings, page 6 ff.

10. The yellow LED "signal in" in the front of the *AirPort24* transmitter flashes once, if not see point (3).

11. The green LED "signal out" in the front of the *AirPort24* transmitter flashes, the *AirPort24* transmitter is in transmission mode, installation is now complete.

Setting the transmission power

The transmission power can be set to different strengths in 3 stages.
Switches **1** and **2** of the left-hand DIP switch row are provided for this purpose.

Full power
on on = 500 mW

Low power
on off = 25 mW

Transmitter off
off off = 0 mW

Setting the address

AirPort24 transmitters and *AirPort24* repeaters in a system must have different addresses. if their transmission ranges overlap. The address space comprises the range 0 to 7. The address is set using DIP switches 3 to 5. Switches 6 to 8 of the DIP switch row are without function.

Address 0

Address 1

Address 2

Address 3

Address 4

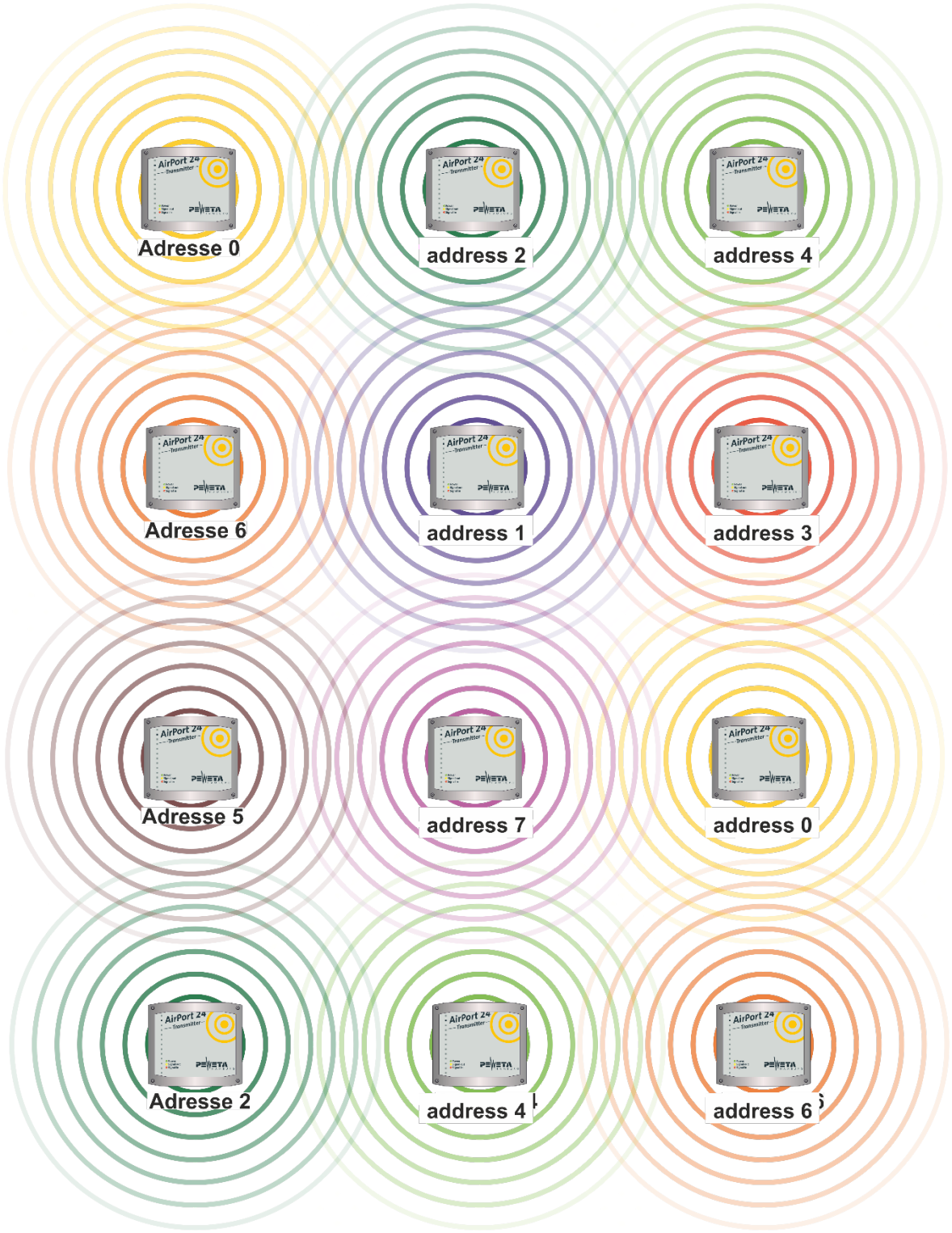
Address 5

Address 6

Address 7

Spatial distribution of transmitters/repeaters

Transmission areas with the same address must not overlap
Consecutive addresses (0 and 1 ... 2 and 3) should be avoided, one value should always be skipped (0 and 2 ... 2 and 4)



Network connection

A network connection (RJ45) is located on the bottom side of the *AirPort24* transmitter.
The clock can synchronize to an NTP server located in the network and thus receive time and date from an NTP server. The *AirPort24* transmitter cannot synchronize other NTP clients (it is not an NTP server).

The network card of the clock is supplied as a DHCP client as standard.

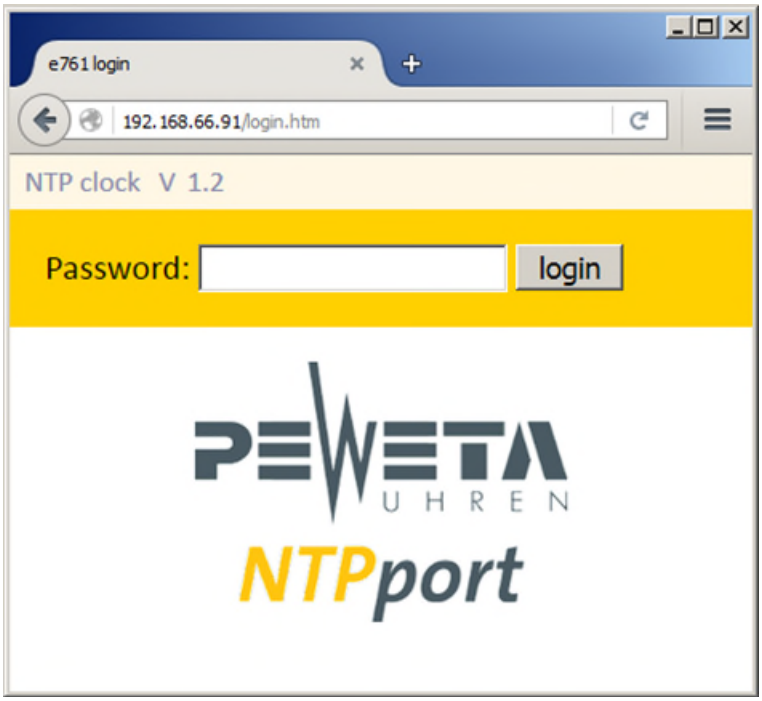
Configuration:

1. Set the network connection (LAN/RJ-45), see page 2.

2. The MAC address of the network card is stored above the connection socket.
   Determine the corresponding IP in your DHCP server.

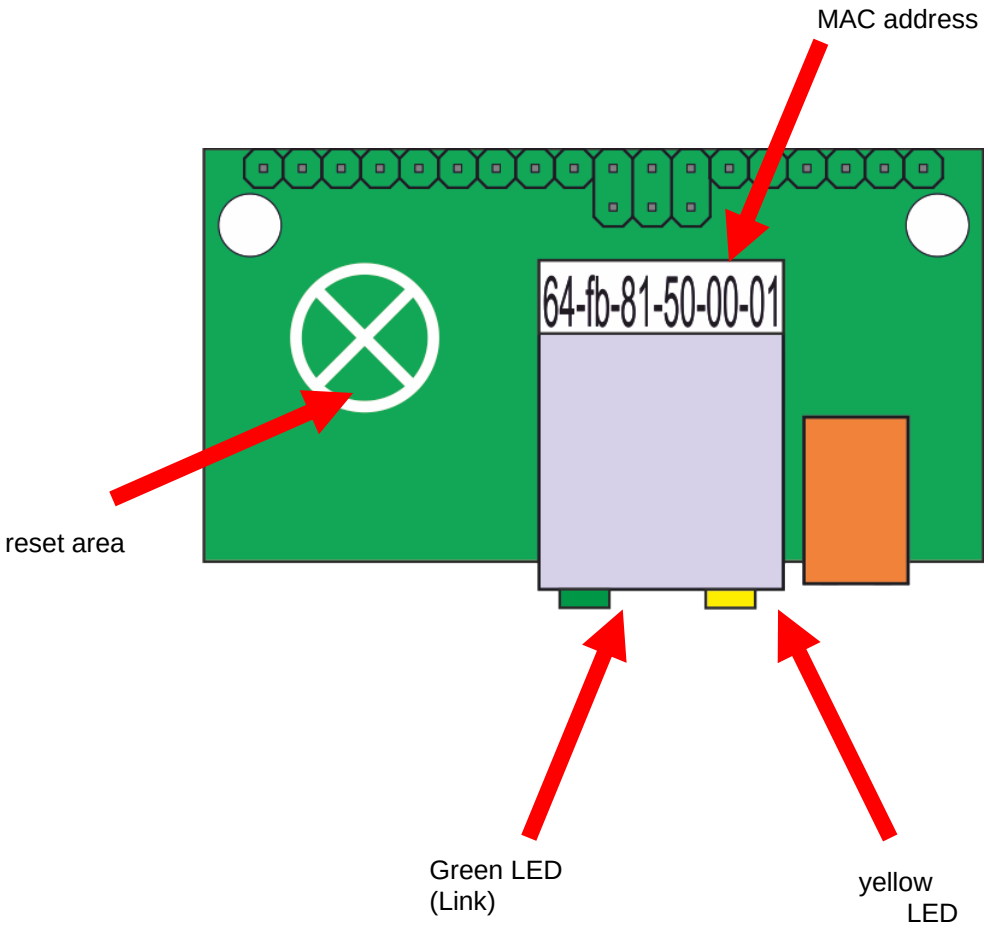
3. Open an HTML browser and enter the IP in the address bar, the login page will be displayed. If the IP is not known, the name can also be entered. The name (for DNS resolution) is composed as follows: "PWCLK", a minus sign, the last 6 digits of the MAC address, a dot and the domain.

   Example 1: IP known: 192.168.66.91
   Example 2: IP not known: PWCLK-123456.firma.local

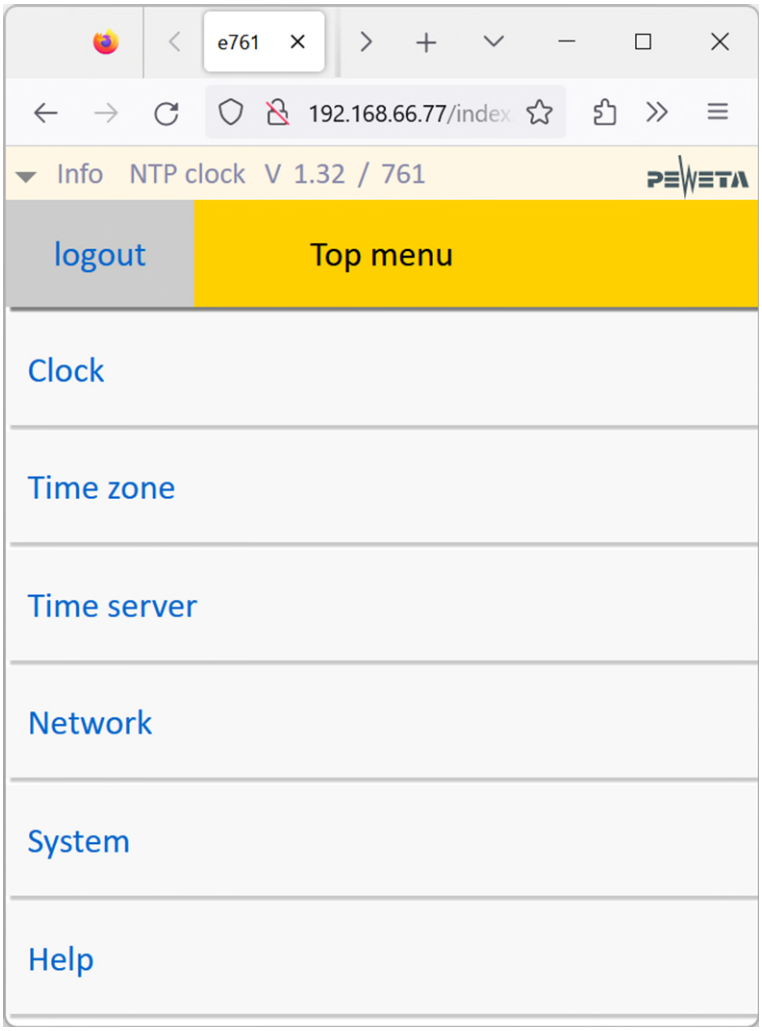


Commissioning without DHCP server:

1. Open the cover of the *AirPort24* transmitter
2. Unplug the mains adapter from the socket (disconnect 230 volts).
3. Press and hold the "reset button"
4. Plug the 230 V power supply unit into the socket.
5. The yellow LED in the network socket flashes. Wait until the yellow LED flashes at least 6 times and then release the "reset button".
6. The *AirPort24* transmitter now has the IP 192.168.1.100 and can be reached from a PC in the same network.



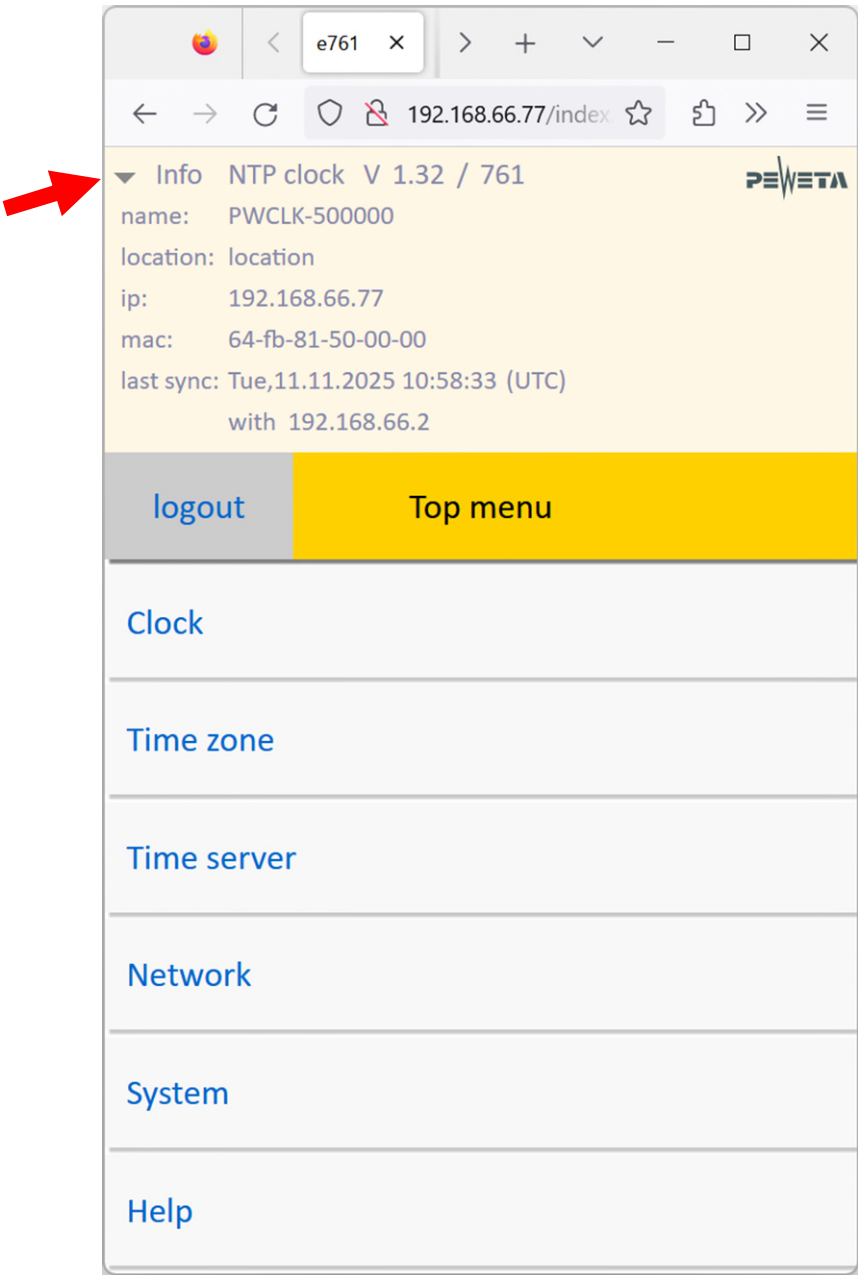
4. Enter the password "ntp" and click on the "login" button.
The "TOP MENU" appears:



Compatible with:

Mozilla	Firefox	Version 43.0.1 or higher
Apple	Safari	Version 9.0.2 or higher
Microsoft	Edge	Version 25.10586 or higher

5. Click on the arrow in front of "Info" to display the current network parameters and the NTP synchronization status:

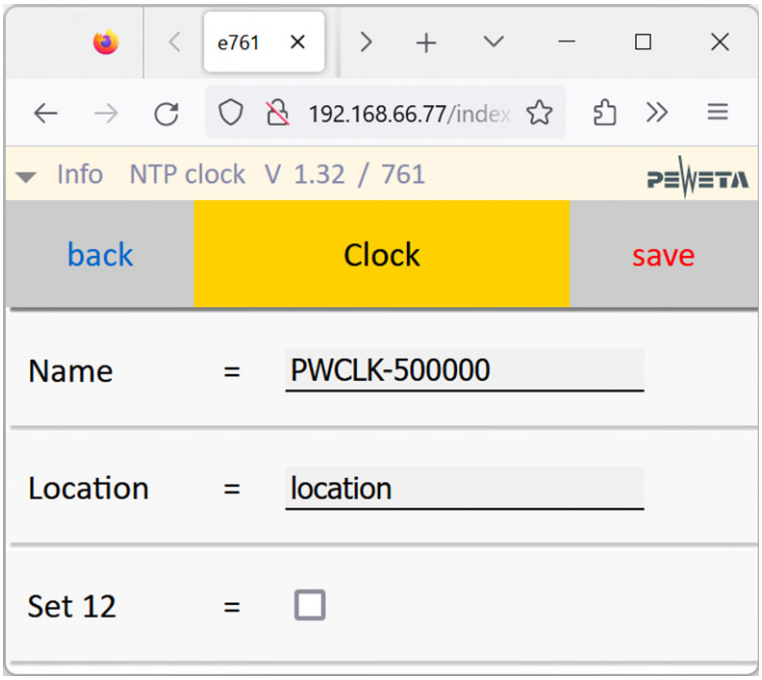


“Clock” menu:

Name: Enter the device name here. With the appropriate DHCP configuration, it can be used for DNS name resolution. 15 characters are permitted as:

- Letters: No distinction is made between upper and lower case, Umlauts, spaces and ß are not supported.
- Numbers: 0 to 9
- Special character: "-" character, must not be at the beginning or end

Location: Enter a value here that describes the clock for an identification (e.g. location)



Note:
Changes are only accepted if they are confirmed with "save"!

Use the "back" button to return to the "TOP MENU", do not use the back arrow key of the HTML browser as this will lead to a logout.

„Timezone“ menu:

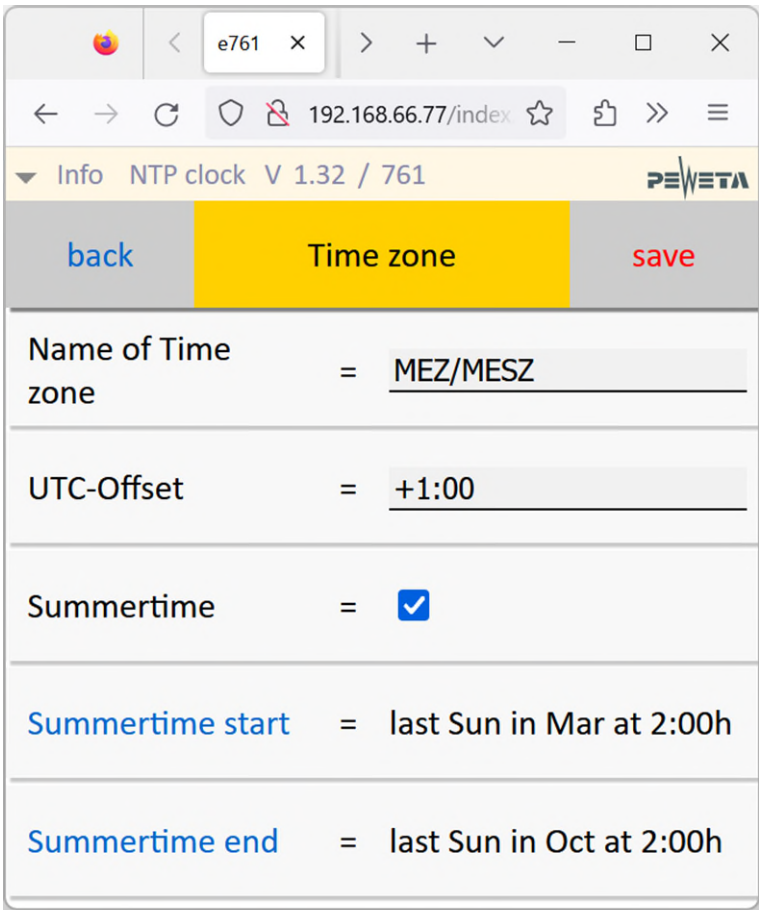
Here you can set whether and when the watch changes to summer/winter time and whether an offset to UTC is displayed.

The NTP server sends the time as UTC (Universal Time Coordinated).
Data for summer/winter time and a UTC offset are not sent.
If the clock shall display local time, these values must be defined.

Name of timezone: The name for the time zone can be entered here.
For Europe e.g. CET / CEST

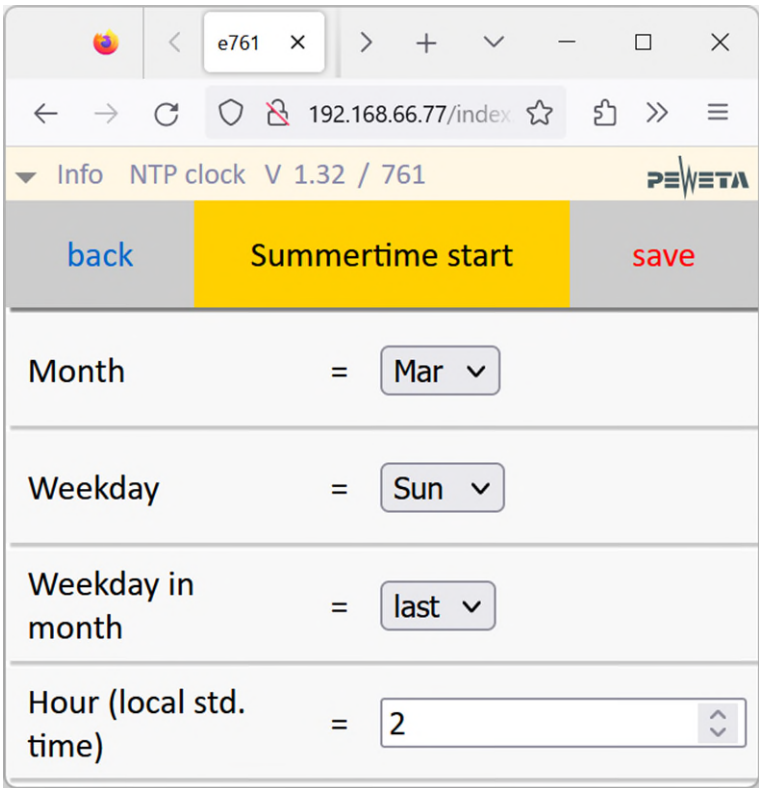
UTC-Offset: Enter the local time offset to UTC here.
Values from +14:00 hours to -14:00 hours are accepted.
The default value is +1:00 (CET/CEST).

Summertime: Tick the box and confirm with "save" to set up a summer/winter time changeover:



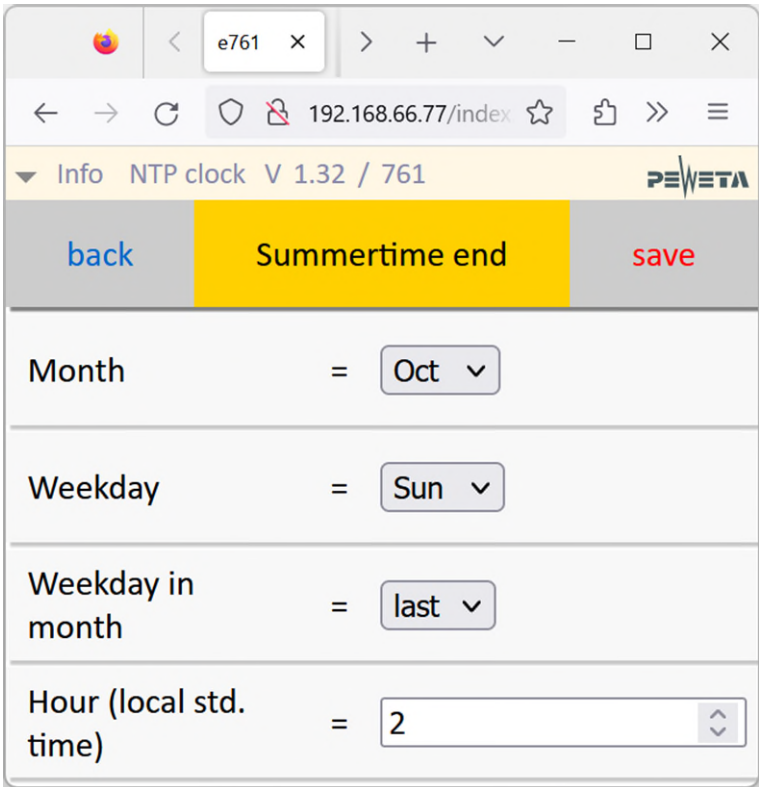
Start time of summer time (daylight saving time)

Summertime start:	Click on the "Summertime start" button to set the month, weekday, weekday of the month and the time when daylight saving time starts.
Month:	Month in which daylight saving time starts.
Weekday:	Weekday on which daylight saving time starts.
Weekday in month:	1. 2. 3. 4. or last weekday in the month
Hour (local std.time):	Time at which the clock should switch from standard time to daylight saving time. The time should be selected as local standard time (winter time).



End date of summer time (daylight saving time)

Summertime end:	Click on the "Summertime end" button to set the month, weekday, weekday of the month and the time when daylight saving time ends.
Month:	Month in which daylight saving time ends.
Weekday:	Weekday on which daylight saving time ends.
Weekday in month:	1. 2. 3. 4. or last weekday in the month
Hour (local std.time):	Time at which the clock should switch from daylight saving time to standard time. The time should be selected as local standard time (winter time).



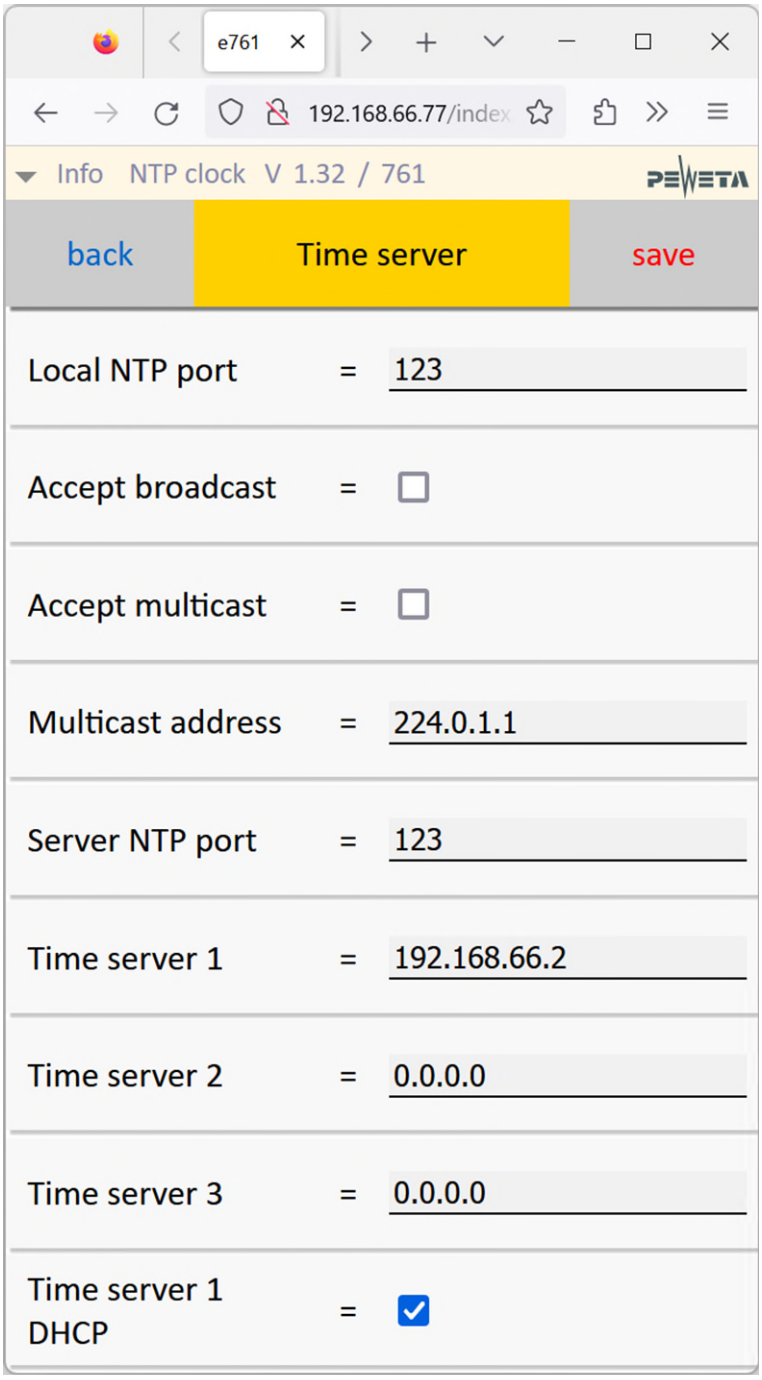
“Timeserver” menu:

Note:
Changes are only accepted if they are confirmed with "save"!

Use the "back" button to return to the "TOP MENU", do not use the back arrow key of the HTML browser as this will lead to a logout.

Local NTP port:	The port of the master clock for the NTP protocol can be changed here.
Accept broadcast:	If the check box is set, the clock synchronizes to NTP boradcast packets.
Accept multicast:	If the check box is set, the clock synchronizes to NTP multicast packets.
Multicast address:	Enter the multicast IP here.
Server NTP port:	The port of the NTP server for the NTP protocol can be changed here.
Timeserver 1	The standard NTP server is entered here.
Timeserver 2	An alternative NTP server can be entered here. If the NTP If timeserver 1 is not available, NTP timeserver 2 is requested.
Timeserver 3	Another alternative NTP server can be entered here. If the NTP timeservers 1 and 2 are not available, NTP timeserver 3 is requested.
Timeserver 1 DHCP:	If the check box is set and the IP of an NTP server is transmitted via option 42 from the DHCP server, a manually entered IP under Timeserver 1 will be overwritten.

See illustration on next page


e761
192.168.66.77/index
Info NTP clock V 1.32 / 761
back
Time server
save
Local NTP port = 123
Accept broadcast =
Accept multicast =
Multicast address = 224.0.1.1
Server NTP port = 123
Time server 1 = 192.168.66.2
Time server 2 = 0.0.0.0
Time server 3 = 0.0.0.0
Time server 1 DHCP =

“Network” menu:

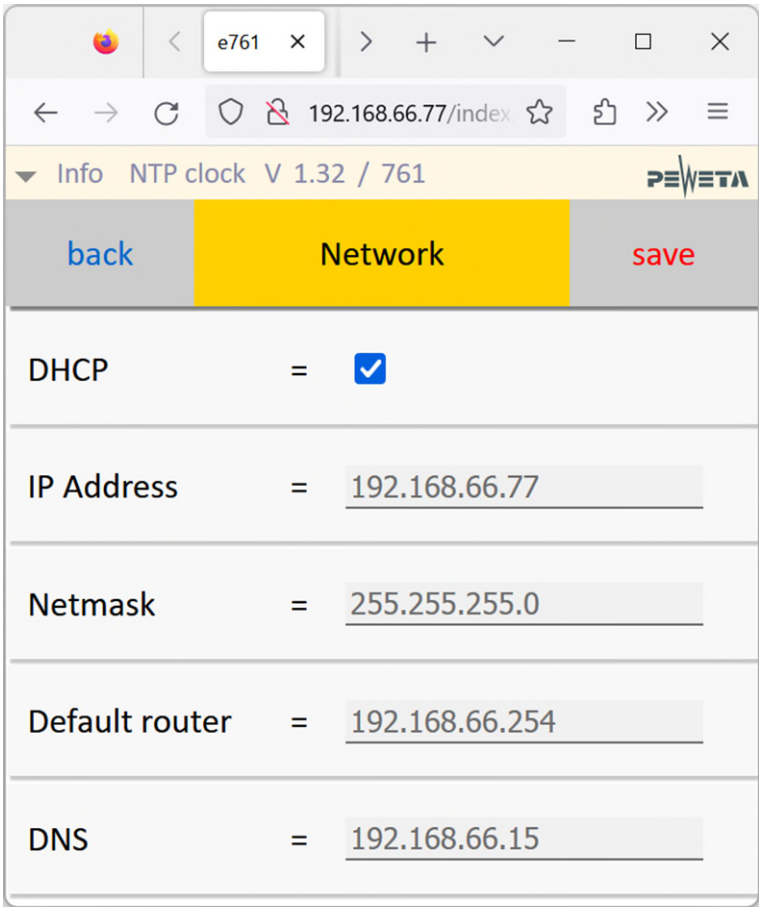
DHCP: If the check box is set, the network card obtains the network parameters from a DHCP server

IP address, network mask, default router and DNS can be assigned/changed manually if the DHCP checkbox is not set.

Note:

Changes are only accepted if they are confirmed with "save"!

Use the "back" button to return to the "TOP MENU", <u>do not use</u> the back arrow key of the HTML browser as this will lead to a logout.

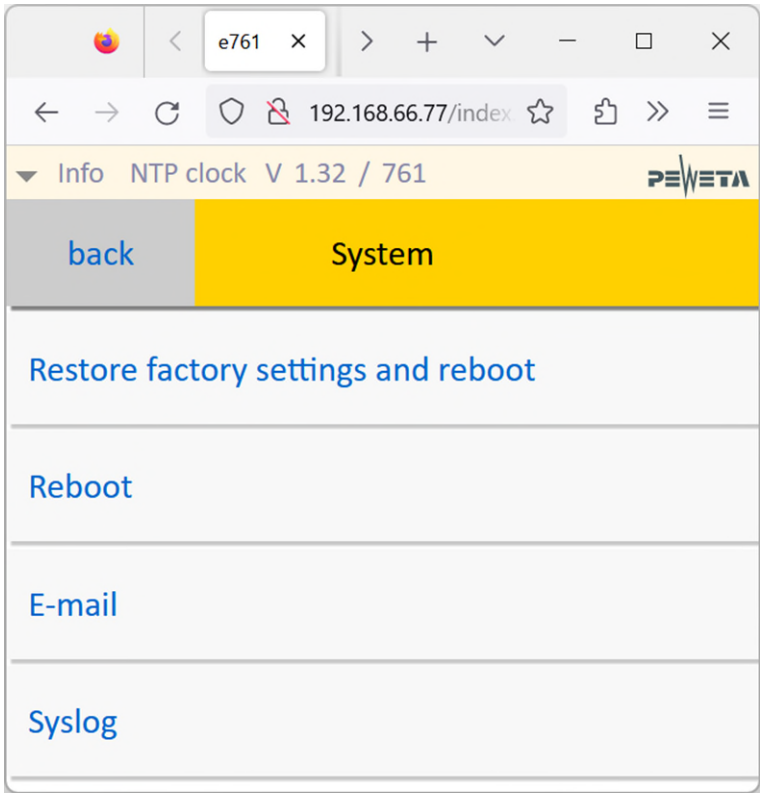


“System” menu:

Note:

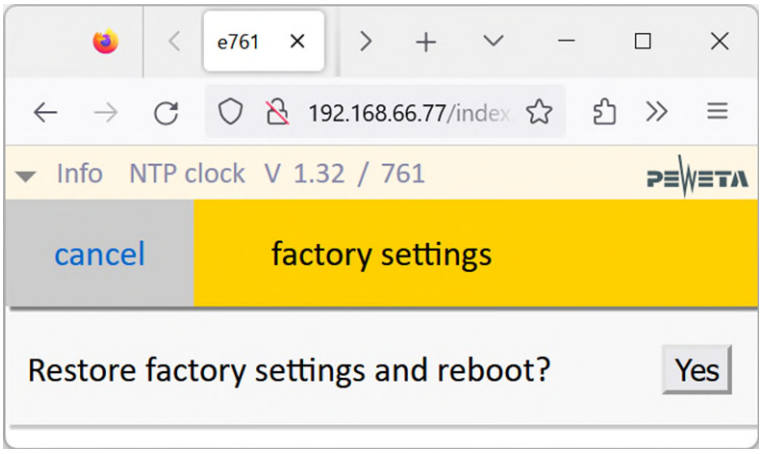
Changes are only accepted if they are confirmed with "save"!

Use the "back" button to return to the "TOP MENU", <u>do not use</u> the back arrow button of the HTML browser



Restore factory settings and reboot:

Resets the network parameters to the factory settings and restarts the network card.

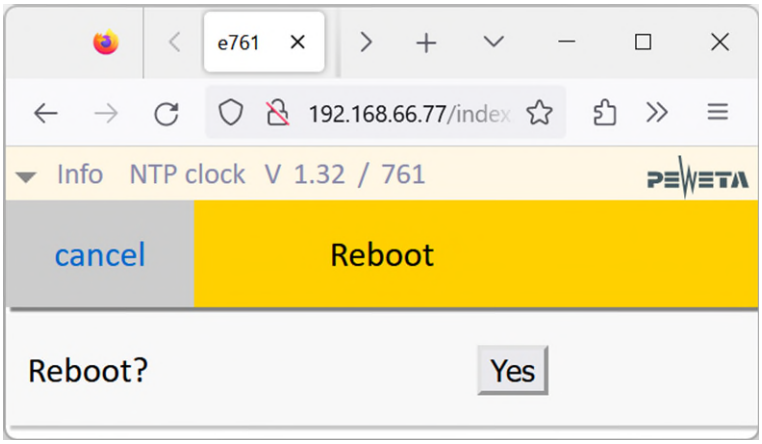


Restore factory settings and reboot at the clock:

1. Unplug the mains adapter from the socket.
2. Touch the "reset surface" with one finger
3. Reconnect the LAN cable with PoE or the external power supply.
4. The yellow LED on the RJ45 in the *AirPort24* transmitter flashes every second.
5. Release the reset button before the yellow LED has flashed 4 times.

Reboot:

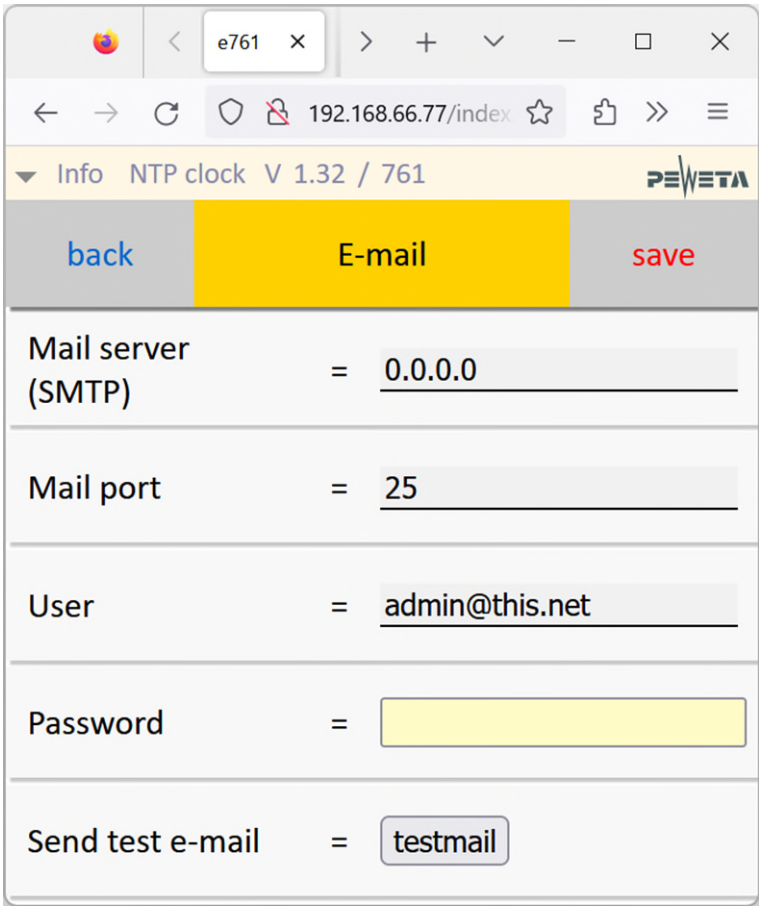
Restart the network card without resetting the factory settings.



E-mail:

Enter the e-mail parameters to receive error messages and system information.
The mail client supports SMTP with LOGIN authentication. Enter the IPv4 address of your mail server and the mail account information here and press "save". You can then check the connection by sending a test mail.

You will receive the following information by e-mail:
1. reset
2. no time synchronization for more than one hour
3. successful synchronization after reset or loss of synchronization.

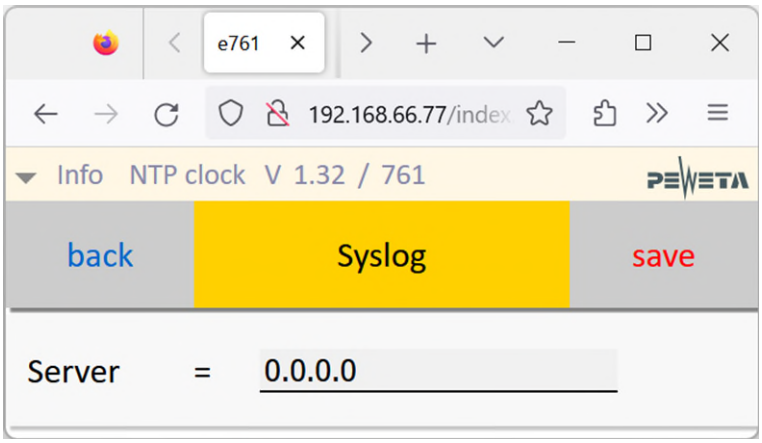


Syslog:

Store a syslog server to receive error messages and system information.

Enter the IPv4 address of your syslog server here.
The clock transmits via UDP/Port 514.

You receive the following information via syslog:
1. reset
2. no time synchronization for more than one hour
3. successful synchronization after reset or loss of synchronization.



Technical data network card

Connection	
Connector plug	RJ45
Cables	CAT5 or higher

Electrical values	
Power supply	About the AirPort24 *transmitter*
Alternative supply voltage	./.
PoE	./.
Power consumption max.	./.

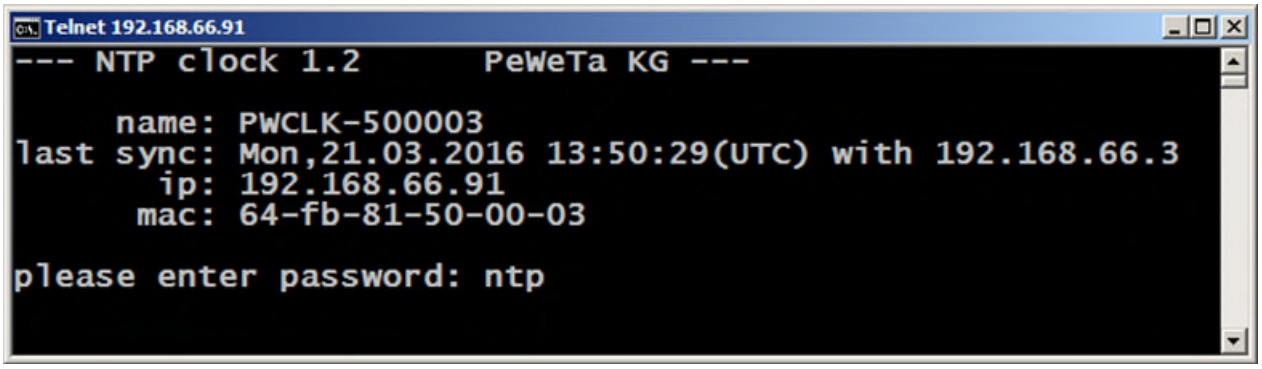
Performance features	
Network	Ethernet 10/100 BaseT Full/Half duplex, Auto negotiation, Auto MDI-X
Protocols	IPv4, TCP, UDP, ICMP, ARP, IGMP, DHCP, HTTP, SNTP client (uni-, multi- and broadcast), SMTP, Syslog

Ambient values	
Protection degree	IP 30 (EN 60 529)
Protection class	III
Climate	Operating temperature: 0 to 55°C Storage temperature: -40 to 70°C 10-95% relative humidity at 25°C, non-condensing

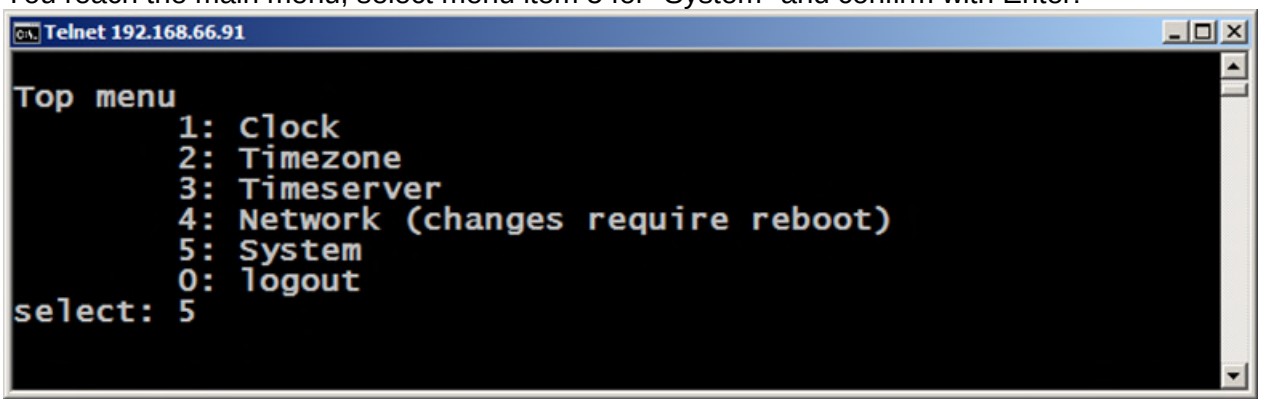
Firmware update network card

Open a command line (also known as a console or terminal) and establish a connection to the clock using Telnet (telnet IP). Confirm with Enter.

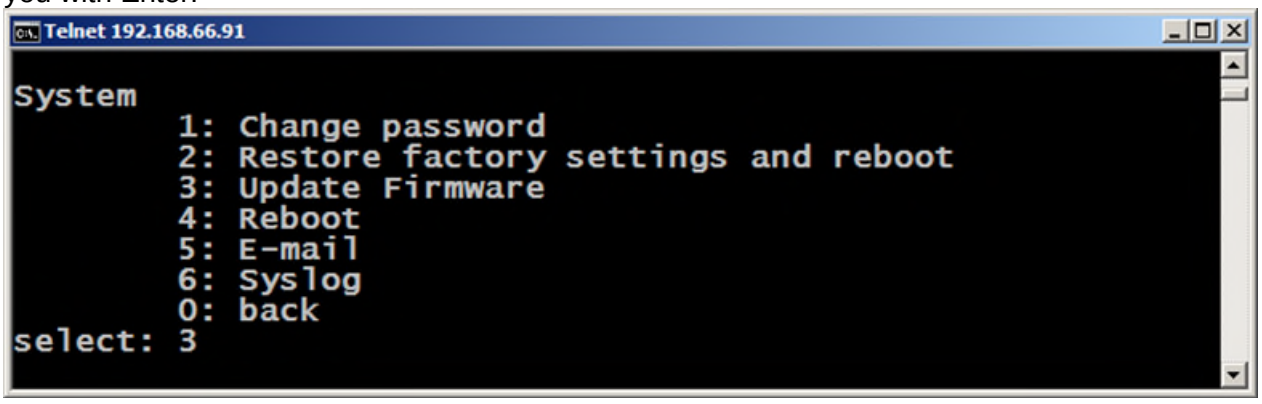
You will be asked for the password for the clock, the default value is "ntp". Confirm with Enter.



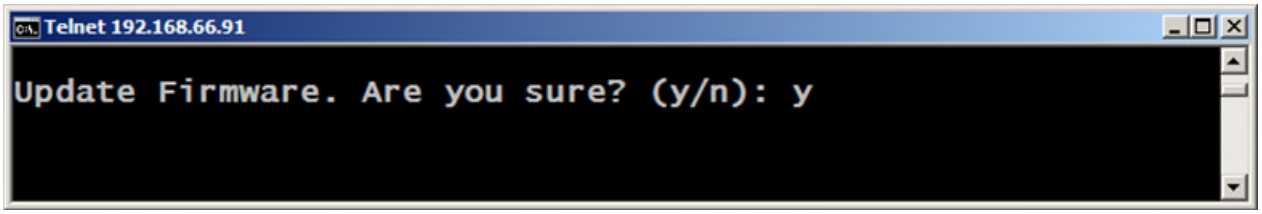
You reach the main menu, select menu item 5 for "System" and confirm with Enter:



You access the system menu, select menu item 3 for "Update firmware" and confirm you with Enter:

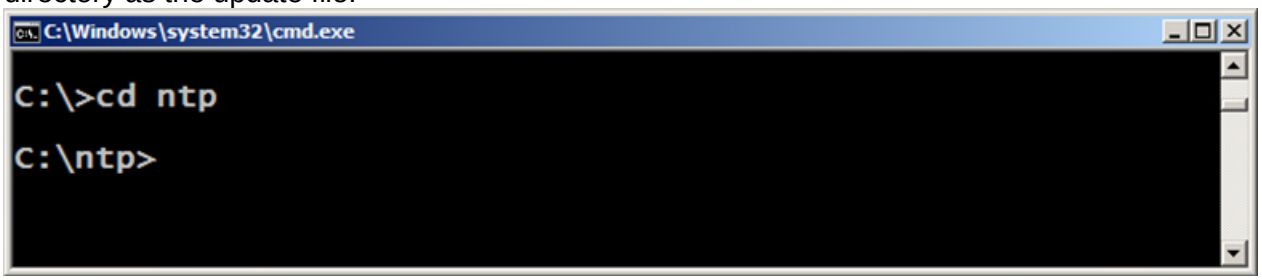


Enter a "y" to continue the process or an "n" to cancel the action.

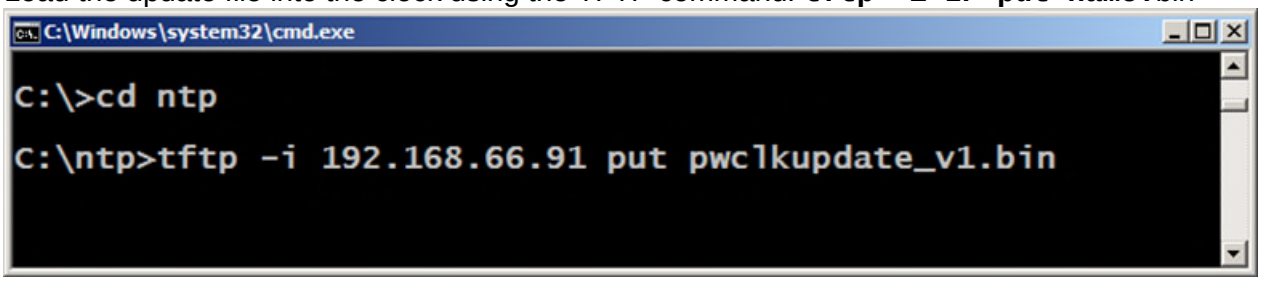


After entering "y", the Telnet connection is terminated.

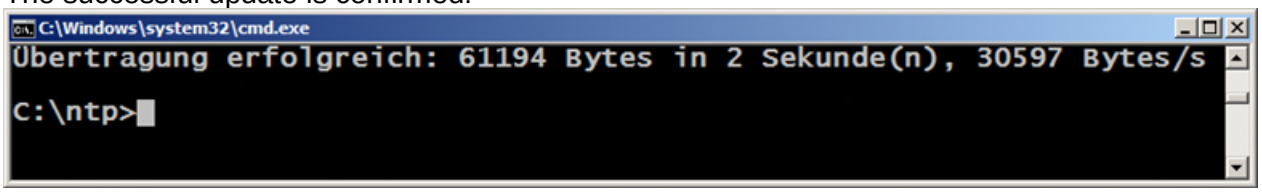
Copy the update file to a drive on your computer, open a command line and change to the same directory as the update file:



Load the update file into the clock using the TFTP command: **`tftp -i IP put name.`**bin



The successful update is confirmed:



Reset the clock to the factory settings: "Restore factory settings and reboot", see page 18 above. If the clock is no longer accessible via HTML after the firmware update, please carry out "Restore factory settings and reboot" **at the clock**, see page 18.

Technical data

Electrical values	
DC power supply	12 - 14 VDC / < 800 mA @12 VDC
Mains power supply Input Output	Plug-in power supply (included in delivery) 100 - 240 VAC / 50-60 Hz 12 VDC / 2.08 A / 25 W

Performance characteristics	
Transmission frequency:	Center frequency: 869.525 MHz,
Modulation:	FSK +/-25 kHz
Transmission power:	2 levels: 25 and 500 mW
Transmission interval:	Every second
Antenna:	Internal λ/4 antenna
Range at 500 mW	Approx. 250 meters in buildings. This information is a guideline and may be significantly lower or higher depending on the building structure. Up to 400m … 1000m outdoors.

Ambient values	
Protection degree	IP30 (EN 60 529)
Protection class	III
Climate	Operating temperature: 0 to 55°C Storage temperature: -40 to 70°C 10-95% relative humidity at 25°C, non-condensing

Headquarters/Production
Sales Worldwide

MOSER-BAER AG | Spitalstrasse 7 | CH-3454 Sumiswald
Tel. +41 34 432 46 46 | Fax +41 34 432 46 99
moserbaer@mobatime.com | www.mobatime.com

Sales Switzerland

MOBATIME AG | Stettbachstrasse 5 | CH-8600 Dübendorf
Tel. +41 44 802 75 75 | Fax +41 44 802 75 65
info-d@mobatime.ch | www.mobatime.ch

MOBATIME SA | En Budron H 20 | CH-1052 Le Mont-sur-Lausanne
Tél. +41 21 654 33 50 | Fax +41 21 654 33 69
info-f@mobatime.ch | www.mobatime.ch

Sales Germany/Austria

BÜRK MOBATIME GmbH
Postfach 3760 | D-78026 VS-Schwenningen
Steinkirchring 46 | D-78056 VS-Schwenningen
Tel. +49 7720 8535 0 | Fax +49 7720 8535 11
buerk@buerk-mobatime.de | www.buerk-mobatime.de